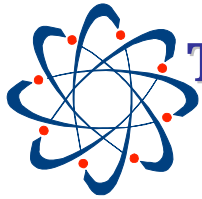


YOUR NEWSLETTER WITH THE LATEST IN RADIATION SAFETY



THE RADCO REGISTER

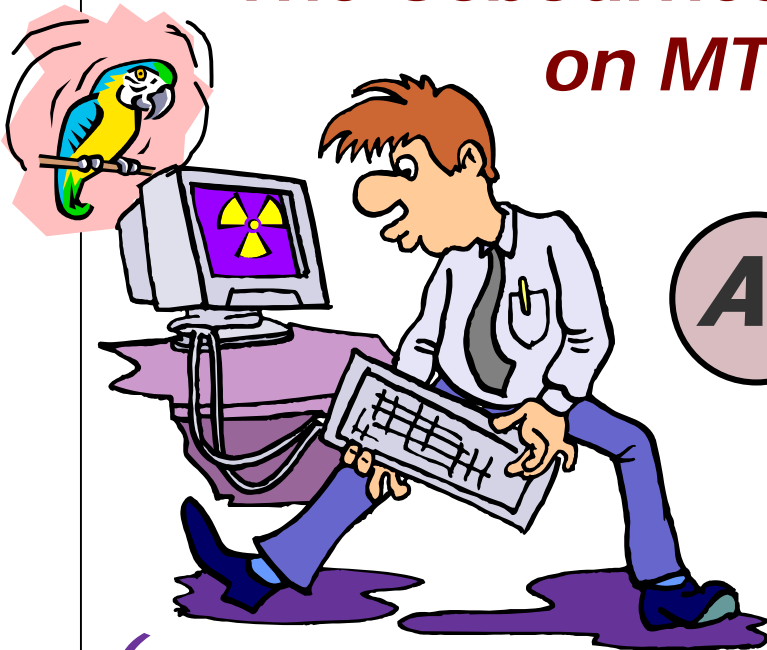
VOLUME 12, No. 3

July 2002

A CECOM RADIATION SAFETY NEWSLETTER FOR THE US ARMY NATIONAL GUARD



Q: *What's more fun than sitting home watching "The Osbournes" on MTV...?*

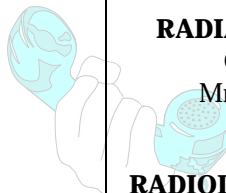


A: *Sitting home Surfing the new "RSO Web page" like Ozzy...!*

(also, we're goin' electronic D read all about it inside...)



in this issue....



ON GUARD page 3

- **Introducing the New DA RSO WEBSITE...CHECK IT OUT....!**
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- **Time to Re-form our Wipe Test Analysis Request Form!**
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PUZZLES & BRAINTEASERS (solutions) page 11

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- **Wipe Test Analysis Request Form last page**

The distribution and content of this newsletter is directed to Army National Guard activities for which the U.S. Army Communications-Electronics Command (CECOM) Directorate for Safety, Radiological Engineering Division, serves as RSSO. The RADCO Register is published quarterly and is intended as a medium for the exchange of radiation safety information between CECOM and the National Guard Bureau. The primary distribution of this newsletter is to Occupational Health/State Safety Offices, U.S. Property & Fiscal Offices, and Combined Support Maintenance Shops, with local reproduction encouraged.



Visit us on the **WEB:**

www.monmouth.army.mil/cecom/safety

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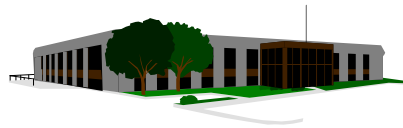
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ON GUARD...

Introducing the New DA RSO WEBSITE.... CHECK IT OUT..!!

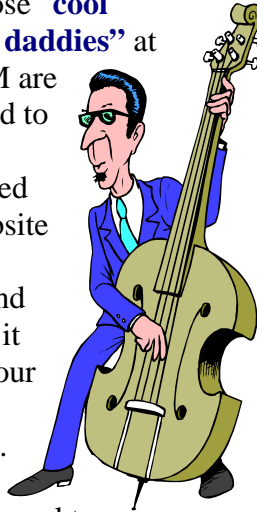
IBM, the Commodore 64, the Apple, the Macintosh, Prodigy, CompuServe, AOL, Microsoft...and now the **DA RSO Website**. It's the next generation of service-oriented information sharing, a reality-based website that is guaranteed to improve the lives of Radiation Safety Officers (RSO). There's no script, no fancy graphics, the information is real, and the site is dedicated to you, the RSOs of the Army.

Get acquainted with this neat and nifty rock 'n' roll website loaded with Army and Federal Regulations, Technical Manuals and Bulletins, Training Courses, Checklists and more good stuff devoted to every Radiation Safety Program. As Ozzy would say: **"It's a #%\$@!% dream come true."**

A cool DU movie, posh Commodity Matrix and RSO Tools, a Jacuzzi (just kidding), Safety links, RSO and Unit level training, DoD Instructions and Directives, Regulatory Guides, CFRs ...you could surf this site for days. This Website provides

comprehensive reference and contact support for all DA RSOs, military and civilian.

Those **"cool rockin' daddies"** at CECOM are delighted to have developed this website for the Army and provide it to you, our **'RAD'** partners. We look forward to making the website available for all to use and take full advantage of.



So check it out at:

<http://www.monmouth.army.mil/rso/index.html>

..and keep on

Rockin-in-the- RAD-World!
(Sing it baby...!!!) ★

Now Why Didn't I Think of That..??? A Helpful Reminder to get those Surveys Done..!!!

Having trouble getting those shops where radioactive materials are being stored to perform their quarterly radiological surveys on a consistent basis? Have

you been written up in the past for it and have about had it up to **here???**

What can you do about it, you ask..???

Well, we have a little program reminder that can be run off of your Microsoft (MS) Outlook Calendar on your PC at work. When programmed it will automatically remind you each time a survey or swipe test is due.



Here's how you go about setting up your PC to run this "aide memoire" (*That's French for "man, my memory really sucks!"*)

Go into the MS Outlook Calendar. Click on the first day of the month (in that selected quarter) and input a reminder on the calendar. MS Outlook Calendar will automatically notify you when a survey or swipe test is due so that you may simply e-mail all of the shops or individuals responsible for actually performing the surveys.

And while we were doing all this, we realized that there may even be a better way. A way to have a reminder pop up on each of your LRSOs computer screens instead of just yours. Here's how to do it:

STEP 1 – In the MS Outlook program, click your calendar.

STEP 2 – Double-Click on the preferred day of the month that you would like to be notified. (With your calendar in the “Month” view, click the “31 Month” button.)

STEP 3 – Under the Appointment Tab, input the appropriate information by typing in the:

- Subject Line.
- Location Line.
- Click on the “All day event” box.
- Click the “Reminder” box. Type in the “remarks area,” (i.e., the big white box) specific instructions of what you would like done, such as, “Perform the quarterly radiological survey of the storage area!”

STEP 4 – Click on the toolbar button at the top that says “Recurrence.” Then in the “Recurrence pattern” select “Monthly,” then select “the first Monday of every 3 month(s) or date of your choice/frequency that suits your needs. Ensure the “Range of recurrence” has “No end date” selected. Then click the “OK” button.

STEP 5 – Click on the toolbar button at the top that says “Invite Attendees.” The “To:” box appears on your screen. Simply type in the e-mail addresses for all of your

LRSOs that are required to conduct quarterly surveys, perform wipe tests, etc. In the remarks area, ensure that you instruct the recipient(s) to select the “ACCEPT” button.

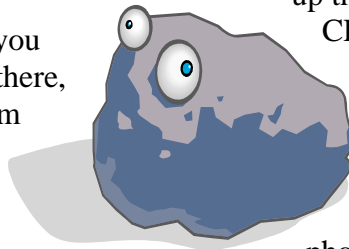
STEP 6 – Click the “SEND” box to forward the information to your LRSOs.



When the recipient(s) opens the e-mail, they will be prompted to select one of three buttons: “ACCEPT, DECLINE or TENTATIVE.”

The recipient must click the “ACCEPT” button. Then, and only then, will the event be placed on their personal calendars at their work-stations. By doing this, you will be able to monitor the reminder(s) on your calendar as well as that of your recipient(s).

So, all you RSOs out there, get out from under your “rock” and give it a try.... It really does work!



Time to “Re-form” our Wipe Test Analysis Request Form!

By George, we’ve done it again...!!! We have revised the form that you use to submit wipe test samples for analysis to our laboratory. The major changes are the deletion of the result block; the additions of the UIC (Unit Identification Code) and Type of Wipe blocks; along with the new revision date for the updated Form.

But Wait CECOM...**No result block...???** How then am I to know the results of my wipes? Good question, curious George! We have a new and improved way of reporting results. Reports will be coming to you by an attachment to an electronic mail (email) message. No longer will you receive a phone call from our lab or a hard copy of the report in the mail. All you need to do is log onto your email and open up the attachment from CECOM, print the report, and place it in your files. It’s that simple!!

The only time you’ll pick-up the phone and hear us on the other end is:

- 1) if your sample analysis results are above the contamination limits specified in AR 11-9

Or.....

- 2) if your request form is lacking all the required information.

For that reason, it is imperative that you fill out the email and UIC blocks of the form. If they are left blank it will be impossible for us to provide results electronically and we will have to rely on the phone company and snail mail and we all know how fast a snail moves.

We have provided detailed instructions on the back of the form for you to follow when filling it out. Also on the back of the form is a reminder of what type of wipe to use, depending on the isotope, when performing wipe tests. Remember, for H-3 and Ni-63, use the metrical wipe, which is the white disc not the blue.



Please use this form for **ALL** future submissions of wipe test samples for analysis and discard all forms with a revision date prior to July

2002! A form is attached at the very end of this RADCO, so be sure to make some double-sided copies for your files.

You can also download this form from our website; the web address is listed on the bottom of the Table of Contents page of this RADCO.

We have been beta testing this process with great success. After you have used this new procedure for a while, we would love to hear from you with your comments. Just shoot us a reply to the email that you receive from the lab with your results. We look forward to your feedback. ★



FY03 CECOM Radiation Safety Training Schedule

The FY03 schedule will appear in the next edition of the RADCO Register, in the meantime, your State Radiation Safety Officer (SRSO) will receive the official e-mail schedule from us in September 2002, so contact your SRSO at that time! Remember to keep your SRSO in the loop, the SRSO should approve all radiation safety training requests in your state!

KUDOS in the Big "D"

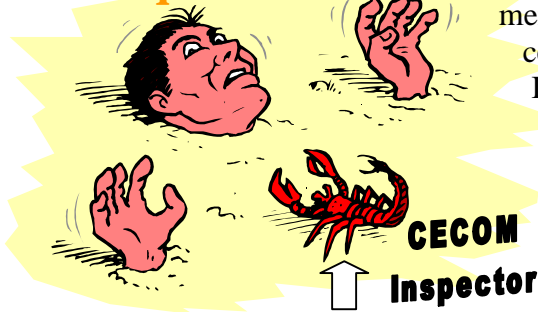


Congratulations for a job well done to all of the ARNG personnel who attended our 40 Hour RSO Course in The Big "D" (Dallas), Texas, 24-28 June 2002. We would like to take this opportunity to recognize two students who distinguished themselves by achieving the highest final course grade of 100. That honor goes to Michael J. O'Neill from South Carolina ARNG and Kenneth P. Havlichek from Colorado ARNG. **"How 'bout we give dem Boys a coal bare (cold beer)" ..!!!** Keep up the good work, you and your fellow classmates are a credit to the ARNG.



You'll Avoid the "Quicksand" with Operator Training..!!

Calling all AN/UDM-2 Operators, or "WANNA-BE" operators..!!! CECOM DS is planning a one day AN/UDM-2 Operator Training Class in FY03 (date to be announced) to be held here at Fort Monmouth, **but only if enough prospective students request the training.** We know that most AN/UDM-2s were fielded a few years ago and that operators were trained at that time, but there has naturally been a turn-over of personnel (folks retiring, reassignments, etc.). This has left some CSMSs with not enough trained personnel to keep their programs from sinking into a sea of "quicksand"...



So, to avert that "sinking feeling" you get when the lack of training becomes evident, we recommend you sign up for this upcoming 8-hour course. Remember, during a program evaluation,

you must be able to produce paperwork to prove that you are a trained operator.

Bear in mind that the 8-hour operator training requirement is not met in the RSO training. So please don't fall into the "I've had the 40-hour RSO course, I am trained." trap.

The approved operator training sources are: a completion certificate from the CECOM DS AN/UDM-2 Operator Training Course; a completion certificate from the U.S. Army Chemical School Calibration Custodian Course; a memorandum stating you were trained by another "approved operator;" or training approved in writing by the NGB RSSO.

Check your training records to see if you have the appropriate memorandum or certificate on file.

If your appointed AN/UDM-2 operator needs training, and you want us to do it, give us a call to reserve a slot in the upcoming class. The SRSO must assure that operators of the AN/UDM-2 RADIAC Calibrator are qualified by virtue of their training. The eight hour training for operators must include:

a. Fundamentals of Radiological Operations.

This includes:

- Types of radiation
- Penetrating ability
- Biological Effects
- Protection Measures
- Dosimetry

b. RADIAC instrument theory. Instrument application/survey techniques.

c. Safe working practices and hazards. Good health physics practices and review of the SOP.

d. On-the-Job (OJT) training. OJT in the operation and care of the AN/UDM-2 Calibrator.



SRSOs, talk to your calibration folks and determine if your AN/UDM-2 operators have been properly trained; that the training was documented; and if there is a need to train additional personnel. If we don't hear from you, we'll assume you've got your UDM-2 training program out of the "quicksand" and planted firmly on **solid ground.** ★



Our first question was sent in from SPC M. I. Leaking out of Trickle Down, Tennessee.

Question: *I perform the annual leak test for all Chemical Agent detectors (CAD) and Chemical Agent Monitors (CAM) in my state. Can I return the CAMs/CADs to the owning unit even though I do not have the leak test results?*

Answer: Well, SPC Leaking, you can! If the detector is turned in for wipe testing only, the detector may be returned to its owner. The radiation laboratory will provide test results within ten (10) working days of test sample receipt. Units will be notified telephonically of test results that indicate evidence of leakage. No maintenance tasks (other than leak test) are to be performed on CAMs or CADs until wipe test results

have been received indicating it is safe to work on.

Remember to be **RADWISE!** The disposable gloves used when performing the leak test, and the Kraft paper used to cover your maintenance work area should not automatically be thrown into radwaste! If all leak test results are clean they may later be discarded in the regular trash.

Our second question comes from SSG Ben Outtashape out of Calhoun County, Texas. SSG Outtashape writes:

Question: *I tried shipping my AN/UDM-2 RADIAC Calibrator Set off for calibration recently using **FEDEX**. The folks at **FEDEX** said they could not enter it into the system and would not take it. I shipped it last time using **FEDEX** and had no problem. What in the heck is going on?*

Answer: Calm down Mr. Ben Outtashape. What's going on is the United Nation (UN) numbers are changing

for certain categories of radioactive material. In the past the correct UN number for the AN/UDM-2 was UN2974. The new UN number is UN3332. Although a grace period has been granted to allow for the transition to the new numbers, some **FEDEX** locations will not accept packages when the old numbers are used. We contacted the **FEDEX** Hazardous Goods Department and they informed us they are in fact using the new numbering system but are still accepting packages with the old number (now I'm really confused).



The FIX:

Use the new UN #s on all UDM-2 shipments. If a shipment is in process, and a **FEDEX** location does not accept the package, have them call the hazardous goods department @ 901-344-3000. That should "straighten-out" both the problem and Mr. Ben Outtashape.

This is "the answer man" signing off for now ...see you in the fall when I'll be answering more of your **stalwart** questions. *I don't know what that means but it sure makes me sound important...* ☺



We're Goin' Electronic.....

That's right, you heard it hear first...!!! Soon your quarterly editions of "The RADCO REGISTER" will arrive to you via your e-mail and not your surface mail. Yes, we realize some of you are "oceans away" and don't always receive your RADCO on a timely basis. That's just one of the reasons we're switching to an electronic distribution.



For some time now, we've been carefully collecting e-mail addresses and building a good database of customers, but it's far from complete. We're asking that you take a little time to fill out the following form and FAX it back to us @ 732-542-7161. We'll either add you to our list or check to see that we have your latest address in our files. It's that painless....and the trees you'll be saving will thank you too....!!!

This new method of distribution will ensure you're getting each and every issue delivered directly to you,

while helping to eliminate the "mountains" of paperwork coming across your desk each and every day.



Thanks for your cooperation and continued success in all that you do. ★

RADCO REGISTER **E-MAIL Address Form**

The RADCO Register is published by the CECOM DS to support the NGB State Radiation Safety Programs. Help us ensure you don't miss a single issue. Please fill out this form and FAX it to us @ **732-542-7161**.

You can also mail it to:

USACECOM, Directorate for Safety (DS), ATTN: AMSEL-SF-RE (ZIOLA), Building 2539, Fort Monmouth, NJ 07703-5024. (please make sure your current label is attached)

Name: _____

Organization/Facility: _____

Address: _____

City: _____ State: _____ Zip: _____

E-mail _____

PUZZLES & BRAIN-TEASERS



QUICKIE QUIZ:

1. A Chemical Unit in your National Guard state has 5 CAMs and M8A1s. The NRC requires that these items be leak tested periodically, the leak test samples shall be sent to _____ for analysis.

- a. TACOM b. AMCOM
c. AMC d. CECOM

2. The LORAD Model LPX-160 non-destructive x-ray system is managed by:

- a. AIRDB b. SBCCOM
c. TACOM-RI d. AMCOM

3. A Technical Bulletin (TB) that is very useful in the disposition/disposal of CECOM radioactive commodities is:

- a. TB 43-0133
b. TB 43-0116
c. TB 43-0137
d. TB 43-0255

4. Situation: Under recent Force Protection initiatives, your state has purchased a few x-ray cabinets and scanners to screen incoming mail, packages and equipment. Who should

install the scanners and perform the initial surveys?

- a. CECOM
b. Your CSMS
c. The Manufacturer
d. AMCOM

5. The new MARKS file number for Radiation Decommissioning records is:

- a. 11-9j b. 11-9b
c. 11-9p d. 385-11c

... the answers are on the last page!!

in the field... by Lyle Farquhar



"YEAH, MAN!... THAT NEW PFC FROM HAWAII CAN SURF ANYTHING FROM OCEAN WAVES TO ELECTROMAGNETIC WAVES!"

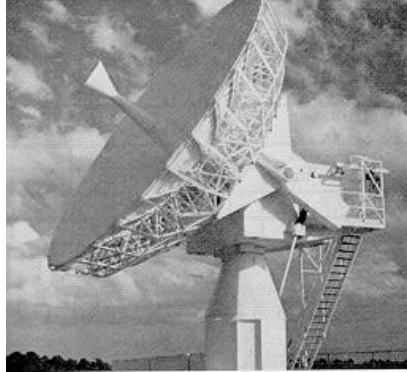
NONIONIZING CORNER

GOT A LEAK ??

A radiofrequency radiation (RFR) leak is something that you don't want to have in your communications system. A leak can cause a potential health hazard and can adversely affect the ability of the communications system to properly function. As you recall, last time we introduced the concept of *force-per-unit area*. We will discover how this same concept applies to RFR safety as well.

When discussing RFR safety, we need to introduce the units of measure that apply. As it turns out, we'll still be using the concept of *force-per-unit area* but we'll be customizing the units of measure a bit. The units we use involve the concept of *power-per-unit area*. In fact, we even give it a fancy name: **POWER DENSITY**. Simply put, power density is the amount of RF power (in terms of wattage or watts) that exists (or could exist) over some surface area. A handy set of units might be watts-per-square inch or watts-per-square meter, etc., but we'll be using *milliwatts-per-square centimeter*.

Ok, we're now ready to discuss something we briefly teased you with in our January 2002 edition. We suggested considering the possibility of having an AN/GSC-39 or an AN/GSC-52 Satellite Communications Terminal on your installation.

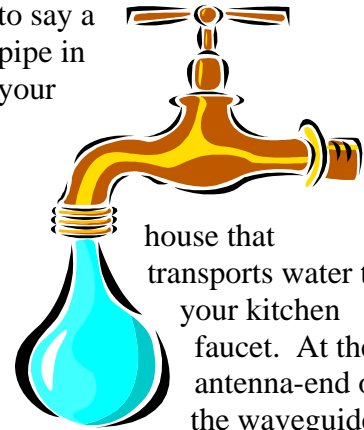


AN/GSC-52

The transmitter in either system can produce as much as 8000-watts at a transmit frequency of about 8-GHz (that's 8000 Megahertz!!). The "dish-shaped" antenna sits atop a pedestal and measures approximately 38-feet in diameter. Both systems utilize a combination of rectangular *and* elliptical waveguide transmission line (more on this below) to transport the RF power from the transmitter (actually the output of a High Power Amplifier (HPA)) to the antenna in a concentrated form.

Hold it....What do you mean "concentrated" form?

What we mean is that the 8000-watts is contained (or confined) by the waveguide while it's traveling from the transmitter and/or HPA to the antenna. Waveguide transmission line is analogous to say a pipe in your



house that transports water to your kitchen faucet. At the antenna-end of the waveguide, the 8000-watts (well...a good portion of it anyway) is allowed to escape through something called an antenna "feed." The feed is designed to efficiently disperse the RF power from inside the waveguide onto the large surface of the antenna reflector so that it can subsequently be "reflected" and launched or broadcast. We could estimate the RF power density at any square foot area on that antenna reflector by dividing the transmitter power (8000-watts) by the area of the 38-foot diameter dish antenna.

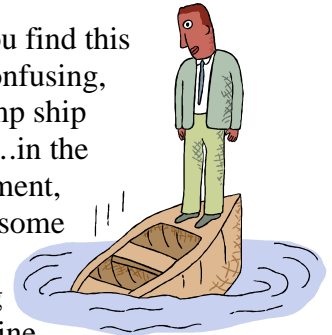
Ok...with that said you should also understand that as the 8000-watts is coming out of the waveguide it's VERY potent/concentrated because the cross-sectional area of the waveguide is relatively small.

Imagine keeping the power constant but changing the size of the waveguide. As we decrease the inside cross-sectional area of the waveguide, the power density inside the waveguide increases (much like our force per unit area increased when focused over a smaller area). The smaller this cross-sectional area is, the greater the RF power density, and the greater the potential for a RFR hazard to exist.



This means that the RF power density (power-per-unit area) may be **NASTY!** Essentially, all that power is exiting through a relatively small hole or “**aperture**” as we usually call it. “How small is it and how “nasty” is it? We’ll tackle that question later!

If you find this a little confusing, don’t jump ship just yet....in the next segment, we’ll do some number crunching to determine just what the RF power density is at an open section of waveguide for this system. Once we do that it will be clear that RF leaks must be taken seriously! ★



QUICKIE QUIZ SOLUTIONS:

1. A Chemical Unit in your National Guard state has 5 CAMs and M8A1s. The NRC requires that these items be leak tested periodically, the leak test samples shall be sent to _____ for analysis.

- a. TACOM
- b. AMCOM
- c. AMC
- d. **CECOM**

2. Situation: The LORAD Model LPX-160 non-destructive x-ray is managed by:

- a. AIRDB
- b. SBCCOM
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- a. TB 43-0133
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- a. CECOM
- b. Your CSMS
- c. **The Manufacturer**
- d. AMCOM

5. The new MARKS file number for Radiation Decommissioning records is:

- a. 11-9j
- b. 11-9b
- c. **11-9p**
- d. 385-11c

WIPE TEST ANALYSIS REQUEST FORM

(Instructions On Reverse Side)

(1) FROM:

(2) TO: Commander, U.S. Army CECOM
ATTN: AMSEL-SF-RE (LAB)
Building 2540
Fort Monmouth, NJ 07703-5024

(3) SAMPLE #	(4) DESCRIPTION OF WIPE	(5) ISOTOPE	(6) TYPE OF WIPE (SEE BLOCK 13)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
(7) WIPE TAKEN BY:		(8) DATE:	
(9) PHONE: DSN:		COMMERCIAL: ()	
(10) COMMENTS:			
(11) MY E-mail Address is:			
(12) UIC:			
(13) Type of Wipe (Insert Letter in block 6) (Q) Quarterly (T) Transportation (I) Incident (O) Other (Please Specify)			

Instructions for Completing the WIPE TEST ANALYSIS REQUEST FORM

- (1) **FROM:** Your mailing address (where our Directorate sends the analysis results).
- (2) **TO:** Directorate for Safety mailing address (where you send the samples for analysis).
- (3) **SAMPLE #:** Print this sample number on the corresponding wipe, vial cap, etc., submitted for analysis.
- (4) **DESCRIPTION OF WIPE:** Brief description of what you wiped, i.e., package, commodity (NSN), storage area survey wipe, locker, floor, shelf, etc.
- (5) **ISOTOPE(S):** List the radioactive isotope you want the wipe analyzed for, i.e., Tritium (H3), Radium-226 (Ra226), Strontium-90 (Sr90), etc.
- (6) **TYPE OF WIPE:** Enter the letter for the type of wipe test performed (See block 13).
- (7) **WIPE TAKEN BY:** Person who performed wipe test.
- (8) **DATE:** Enter the date the wipe test was performed.
- (9) **PHONE:** Your DSN and Commercial Numbers.
- (10) **COMMENTS:** Use this block to communicate with us. You can request more NuCon or Metrical wipes, indicate administrative changes, or just give us more information about your request for analysis. Please send us your e-mail address.
- (11) **EMAIL ADDRESS:** Enter your email address.
- (12) **OUIIC:** Enter your unit identification code.
- (13) **TYPE OF WIPE:** Type of wipe test performed, enter corresponding letter in block 6.

NuCon Wipe or Metrical Filter Which to Use and When?

NuCon Wipe: A 1.75 inch, cloth disk with an adhesive back. The NuCon wipe is used to detect removable gross alpha/beta particles. It can be used to wipe packages, work surfaces, shelves, and perform leak test where the isotope is anything **other than H3 or Nickel-63 (Ni63)**, i.e., Ra226, Sr90, Pu239, Am241, etc. **Please use the wipes in the red and white box only!**

Metrical Filter: A 1.5 inch, **WHITE** (NOT BLUE) nitrocellulose membrane filter. It is used to collect **H3, Ni63 and other low energy beta emitting particles.** **ONLY** a metrical filter shall be used to wipe for these isotopes.